

WHAT IS CLAIMED IS:

5 1. A method of intruder's detection, comprising of usage of more than 1 sensor, represented, for example, by video cameras that are arranged with fixed spatial orientation to form stereo detector at that 2D distributions of light intensity, that form stereo images registered by stereo detector, are transmitting to processing blocks, for example, blocks of digital processing, at that mentioned blocks of digital processing perform processing of sequence of stereo images with different frequencies (high and low), determining the presence of intruder, it's position and speed of transference.

10 2. A method as defined in claim 1 that differs in that they use the processor of detection of moving intruder that performs comparison of 2 or more consecutive images that are entering this block with high frequency, for detection of fast moving intruder.

15 3. A method as defined in claim 1 that differs in that they use the processor of detection of static intruder that performs measurement of 3D relief in the view field of stereo detector, for detection of slow moving (or static) intruder.

20 4. A method as defined in claims 1 - 3 that differs in that they perform measurement of 3D relief by the processor of detection of static intruder in the case of detection of possible intruder by the processor of detection of moving intruder.

25 5. A method as defined in claims 1 - 2 that differs in that they determine the local measure of difference of elements that are visible on stereo image, and memorize elements of stereo image for that the measured local value is more than a predetermined one in storage device, while comparing 2 or more consequent images in the processor of detection of moving intruder.

30 6. A method as defined in claims 1 - 2 that differs in that they perform integration of closely set elements of stereo image into geometrical figures that are stored to memory as in claim 5.

7. A method as defined in claims 1 - 2 or claim 5 that differs in that they determine the distance from stereo camera and the geometrical size for every geometrical figure, as in claim 6, taking into account of fixed positional relationship of sensors.

5 8. A method as defined in claims 1 - 3 or claims 5 - 6 that differs in that they compare geometrical figures as in claim 6 with the set of geometrical figures that were memorized in advance that are describing both the resolved objects and possible intruder, and they use the scaling (enlargement or lessening of figure as in claim 6) in dependence of measured distance between stereo detector and object as in claim 7 that is represented by given figure and they generate alarm signal and perform the action as in claim 4 in case of coincidence with figure of possible intruder.

10 9. A method as defined in claim 1 or claim 3 that differs in that they perform the search of correspondent points in stereo image in the processor of detection of static intruder for measurement of 3D relief as in claim 3 in view field of stereo camera, after that they determine the distance up to the elements of relief that are presented on stereo image using the known fixed positional relationship of sensors.

15 10. A method as defined in claims 1 - 9 that differs in that they perform the memorization of 3D relief of scene thereto they memorize series of predetermined number of stereo images of the surveillance zone in absence of possible intruders, they perform measurement of distances up to elements that are presented on the stereo image as in claim 9, they average of measured distances on the series of stereo images and memorize the obtained relief in the storage device.

20 11. A method as defined in claim 1 or claim 3 that differs in that they perform a comparison of 3D relief that was measured elementwise as in claim 9 with relief that was measured in advance in absence of intruder and memorized in a storage device as in claim 10 in the processor of the detection of static intruder, and they memorize elements of relief for whose the distinction differs from visible elements of relief that are saved to memory on a value that is more than predetermined one, as a result of comparison.

25 12. A method as defined in claim 1 or claim 3 or claim 9 that differs in that they perform the integration of closely set elements of stereo image that are saved to memory of the device as in claim 11 into the geometrical figures.

13. A method as defined in claim 1 or claim 3 or claim 9 that differs in that they perform the comparison of parameters of geometrical figures that are distinguished as in claim 12 with corresponding geometrical parameters of human body that are known in advance, and they make the decision about the appearance of intruder.

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14. A method as defined in claims 1 – 13 that differs in that they perform the calibration before accomplishment of claims 1 – 13 that consists in saving to memory of series of stereo images of object with known geometrical characteristics , measuring of corresponding geometrical characteristics, comparing of measured characteristics with known ones and determining of corresponding corrections at that they perform the calibration again in the case of change of positional relationship of sensors of stereo detector.

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15. A device for intruder detection that includes more than one signal sensor, signal processor and executive block that differs in that they install coupled video cameras as a signal sensor, the dynamic signal preprocessor that is extra inserted into the processor whose input is connected to output of the first sensor, and output is connected to input of extra inserted moving object detector and input of extra inserted first static preprocessor, at the same time the second input of the moving objects detector is connected to output of the second dynamic signal preprocessor whose input is connected to output of the second sensor whose second output is connected to input of second static preprocessor whose second input is connected to second output of second dynamic preprocessor and the third input of moving objects detector is connected to the output of control panel whose second output is connected to the first input of static decision performer whose second input is connected to output of dynamic decision performer whose input is connected to output of moving objects detector at that outputs of first and second static preprocessors are connected to the first input of extra inserted reconstructor of 3D scene whose second input is connected to extra inserted 3D objects calibrator and output is connected to extra inserted 3D objects detector whose output is connected to the third input of static decision performer whose output is connected to executive device of alarm signal creation.